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Supplement of

High-resolution inventory and classification of retrogressive thaw slumps in West Siberia

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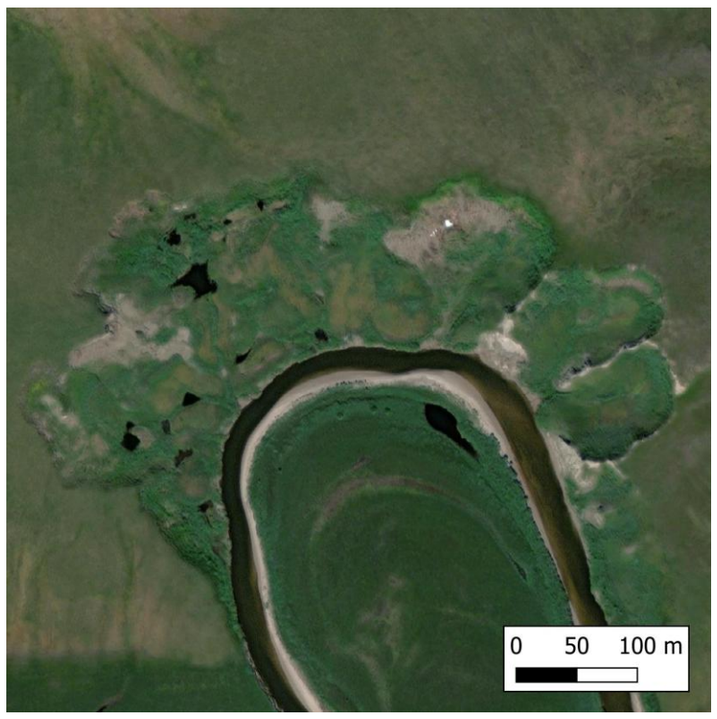
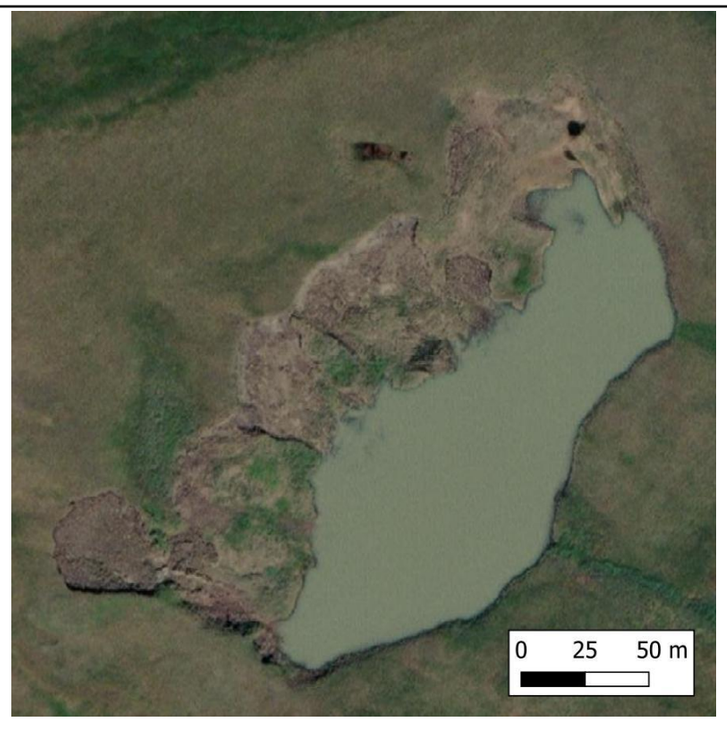
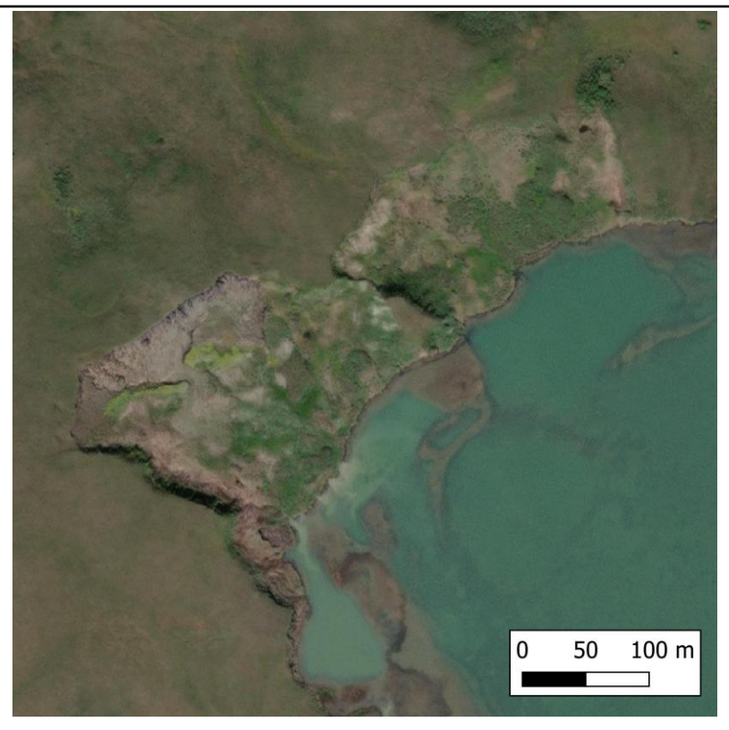
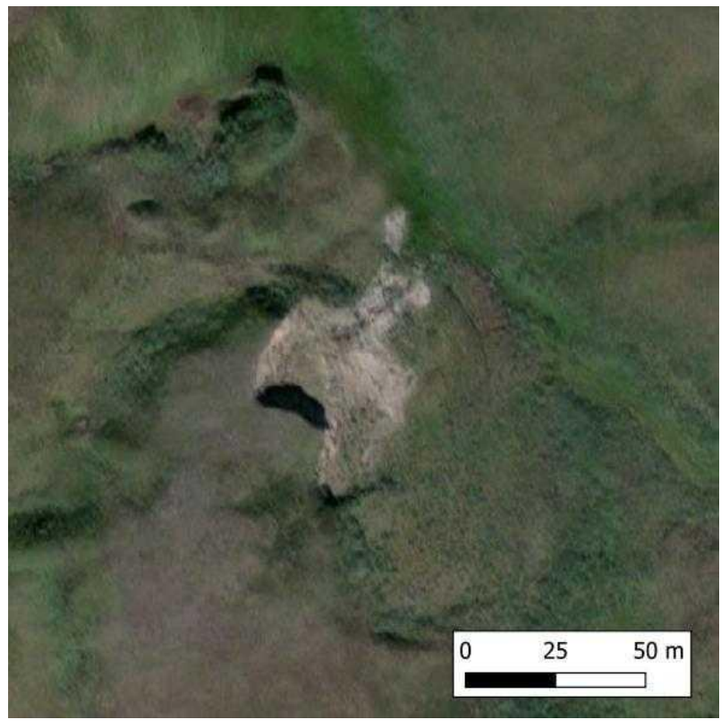
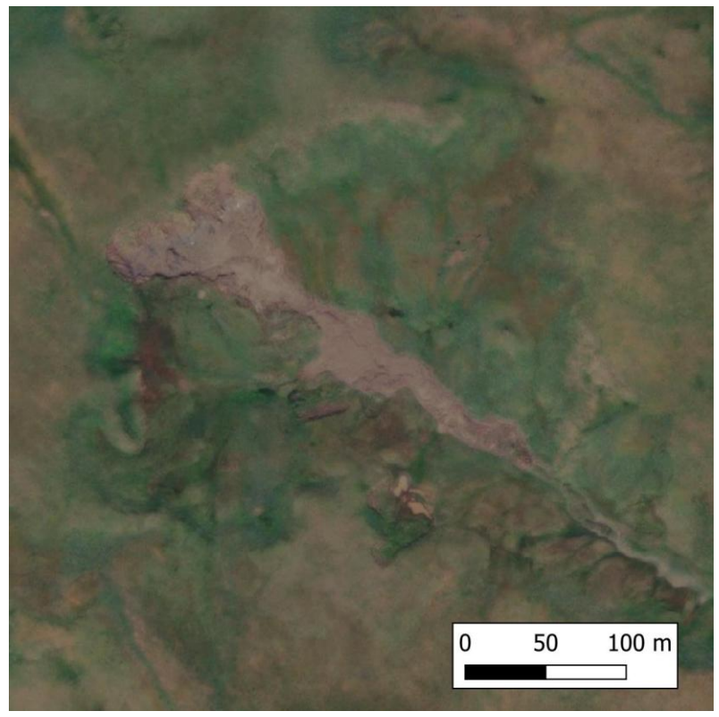
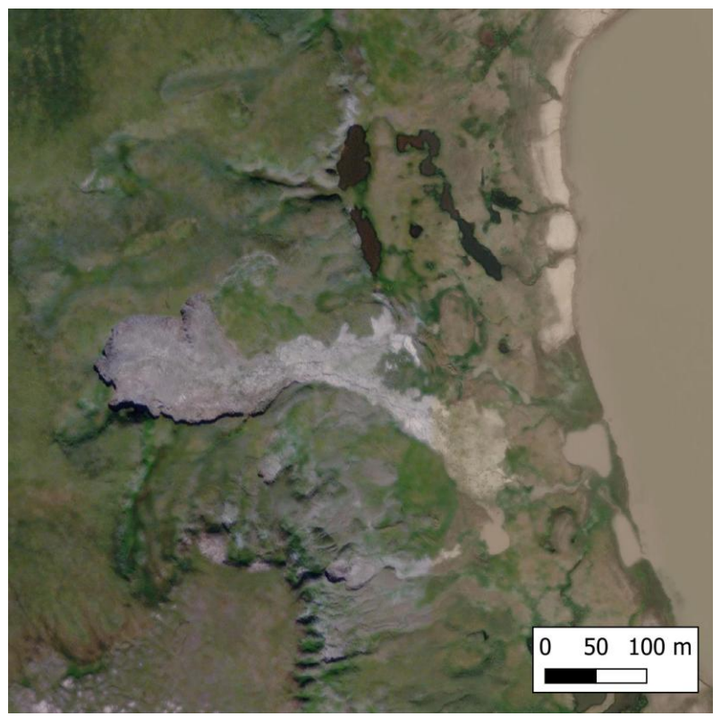
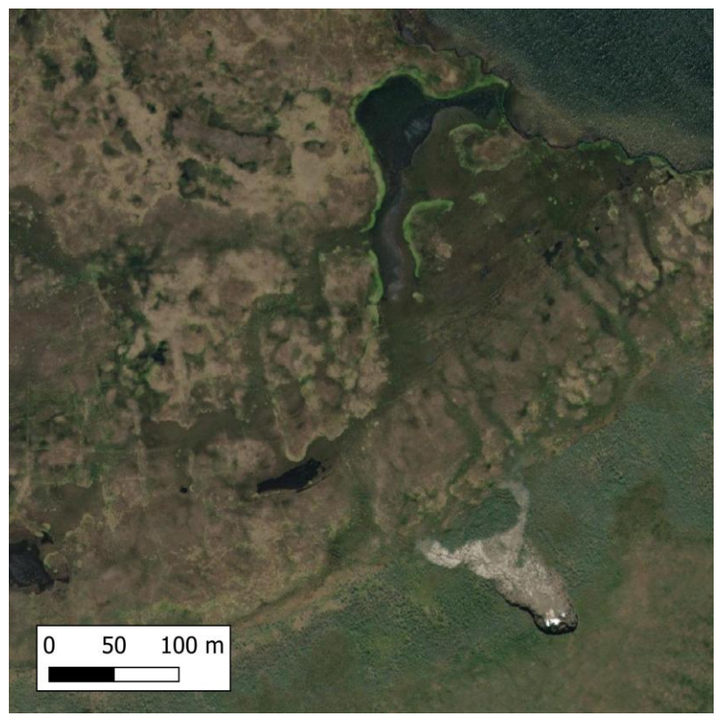
Classifiers:

- Terrain position
- Morphology
- Spatial organization
- Concurrent processes

Terrain Position

Sea - 1		
River - 2		
Lake - 3		

Gullies or temporary watercourses - 4		
Slope - 5		

Morphology

Permafrost disturbance that looks like a mass movement

1. Is there a detached sediment block visible?

- *Unsure* → Mass movement of undefined origin **(skip)**
- *No* → 2. Is the landform elongated and has a partially straight headwall outline parallel to a waterbody?
  - *Yes* → 3. Is the landform related to the coast/shore/bank?
    - *Yes* → 4. Does the landform also contain circular isometric shape of headwall outlines?
      - *Yes* → **Combination of morphologies - 3**
      - *No* → **Thermocirque - 1**
    - *No* → **Thermocirque - 1**
  - *No* → **Thermocirque - 1**
- *Yes* → Active layer detachment slide **(skip)**

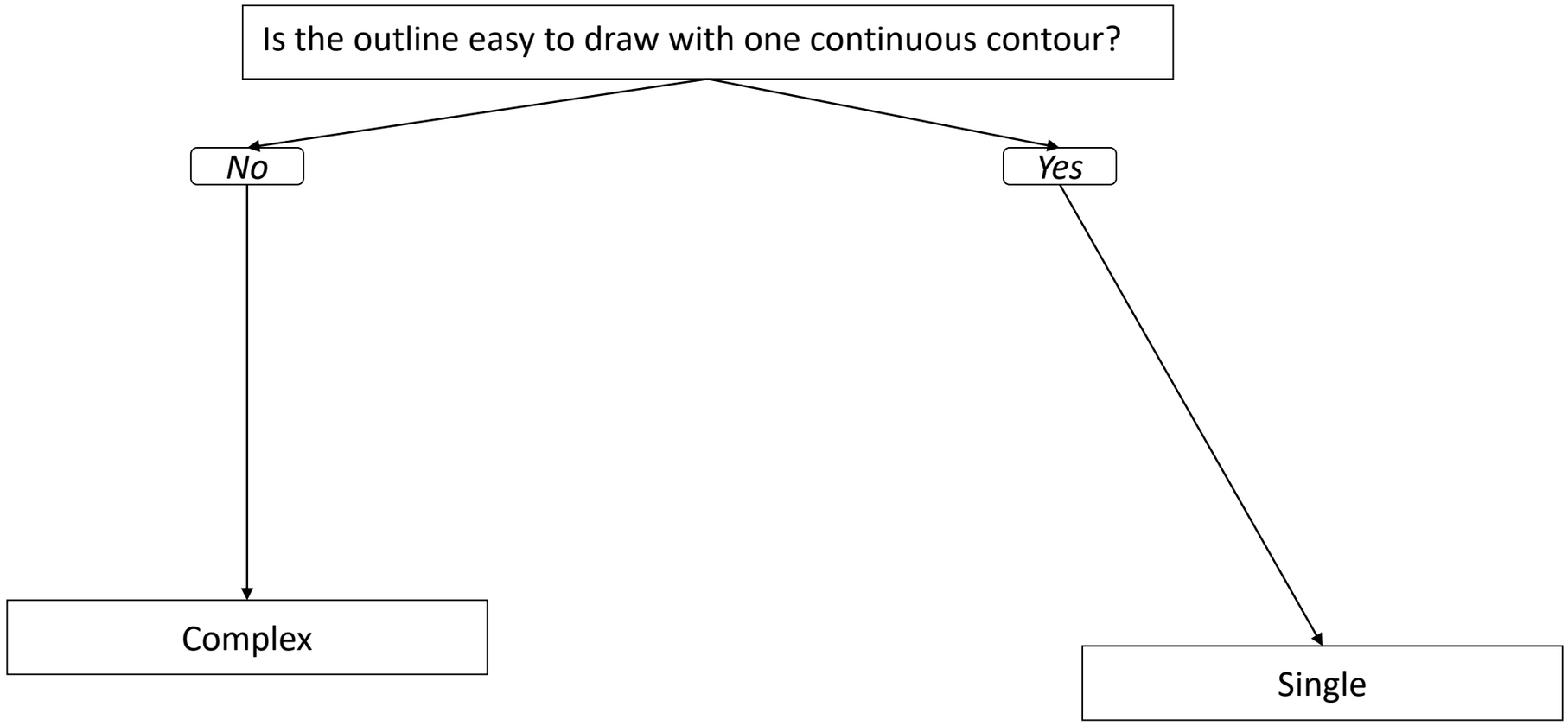
Thermocirque - 1

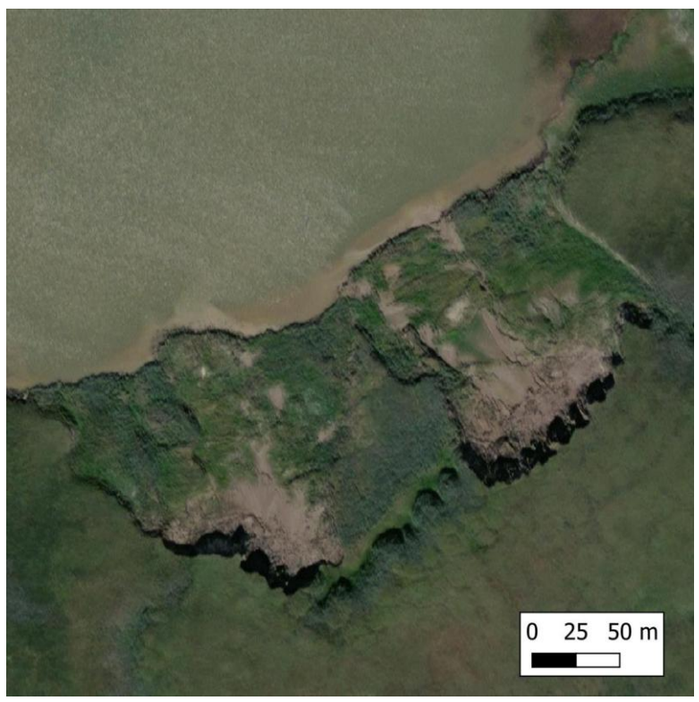
Active layer detachment slide **(skip)**

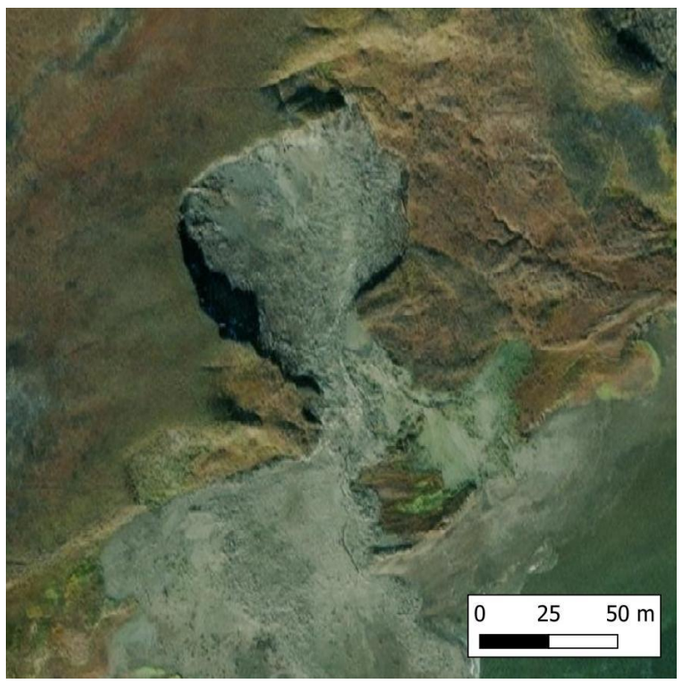
Combination of morphologies - 3

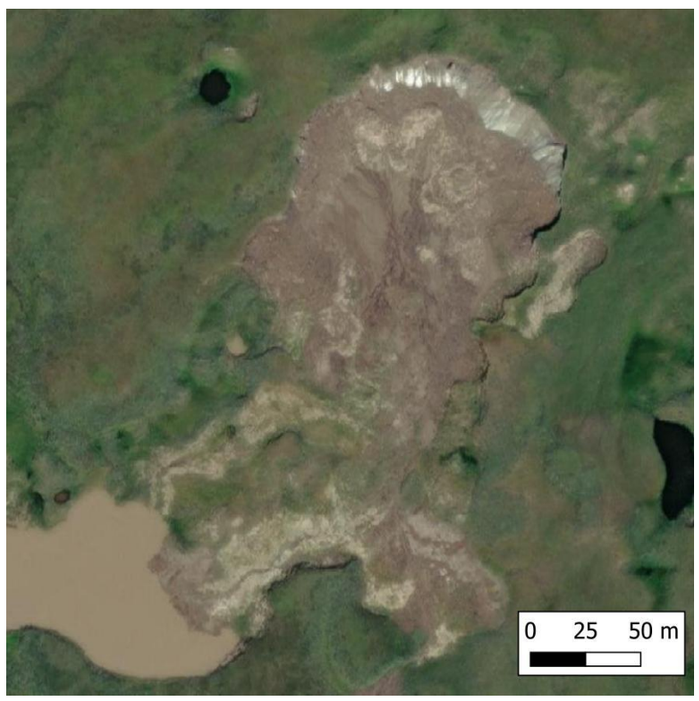
Thermoterrace - 2

Spatial Organization









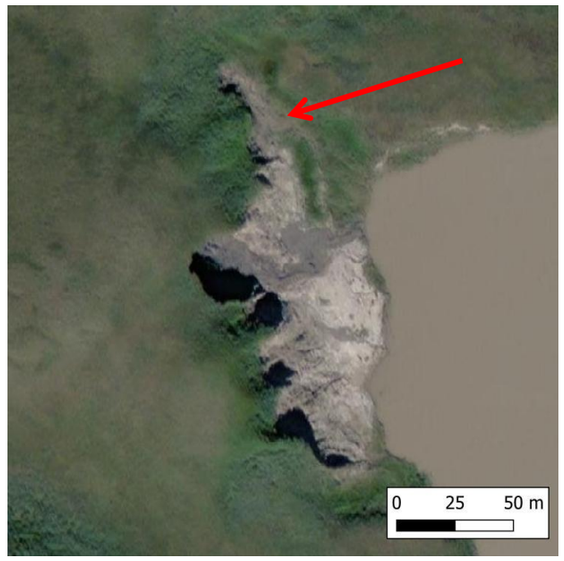
- *A boundary is difficult to define and/or there are two or more actively thawing zones*

- *An outline is distinct and clearly defined*

Concurrent processes

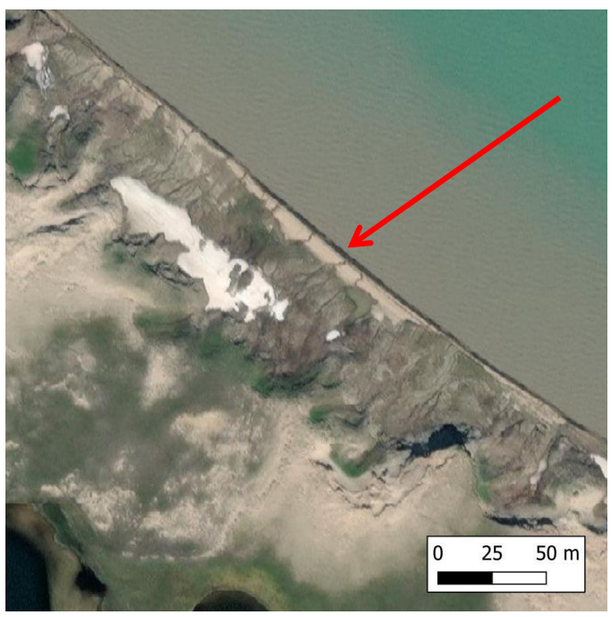
Lateral thermo-erosion

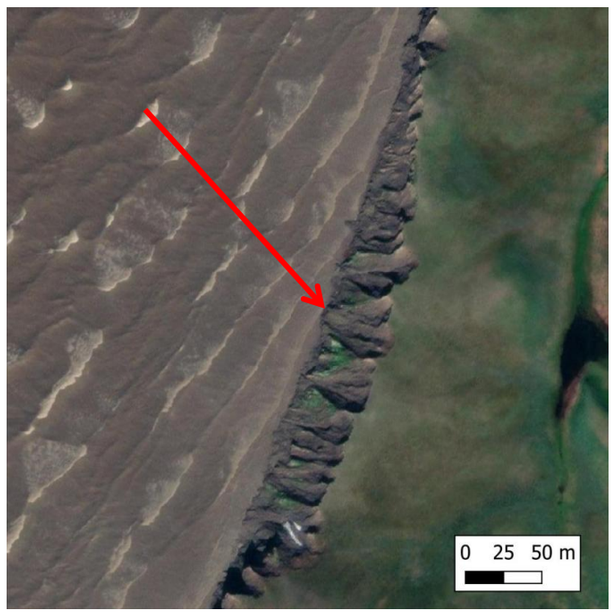
A rugged outline of an RTS and traces of erosive flows



Coastal thermo-erosion

A sharp dark outline of RTS connecting the waterbody and the absence of sediment accumulation in the water



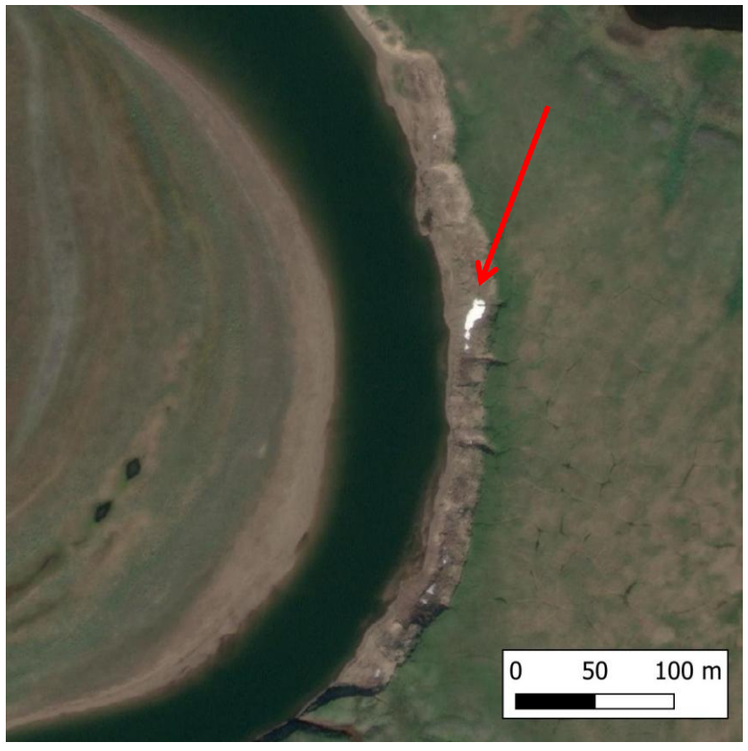


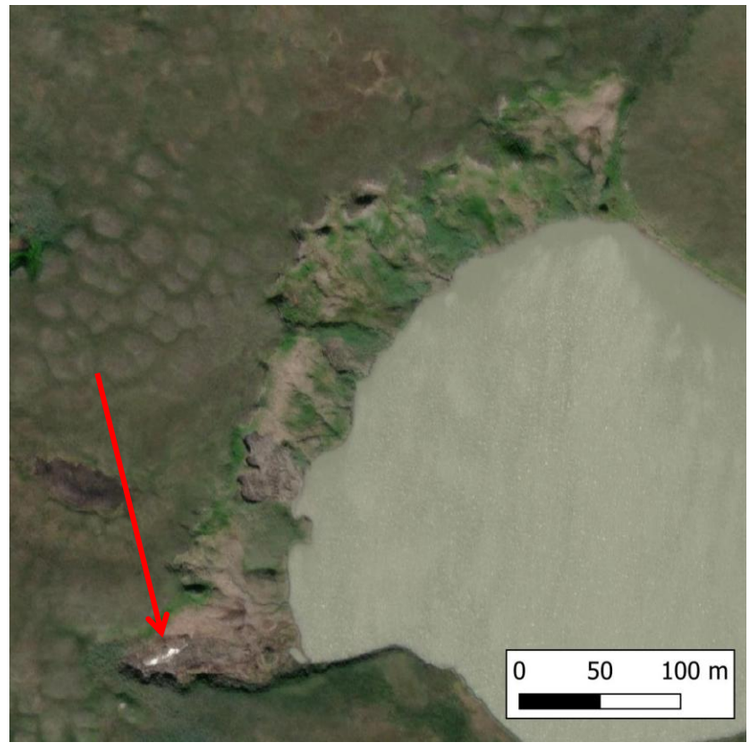
Ice-wedge erosion

RTS headwall has a jagged outline resembling the adjacent polygonal surface of undisturbed tundra

Nivation (snowpack staying over the summer)

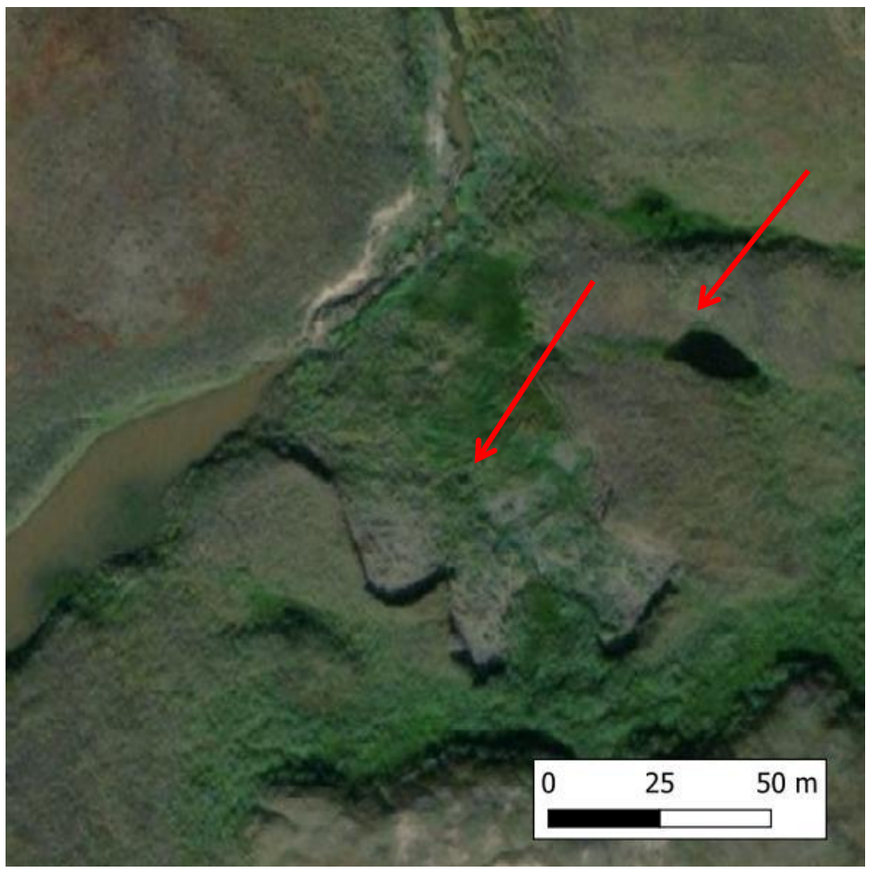
White shapes and spots within an RTS

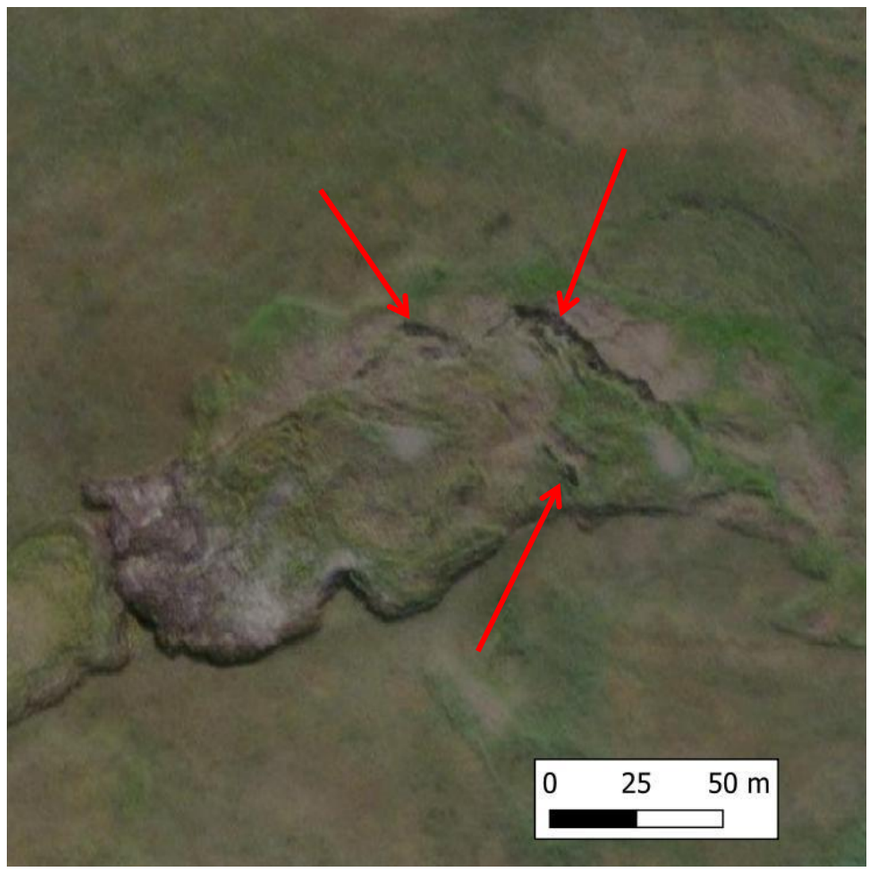




Thermokarst subsidence

Small depressions filled with water within an RTS outline that look like dark spots





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